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ZOOLOGICAL ABSTRACTS[1]

Crampton, Henry E. On the differential effects of the influenza epidemic among native peoples of the Pacific Islands. *Science,* n. s., **55**: 90–92. 1922.

In the late influenza epidemic the natives of the Society Islands suffered a mortality of 15 to 25 percent; the half-caste population lost a distinctly smaller percentage; and the white inhabitants suffered little mortality. The incidence of the disease was about the same for all the three classes mentioned. On the island of Saipan in the Mariana or Ladrone group the Mariana Islanders suffered a mortality in excess of 12 percent, while among the Caroline Islanders, equal in total number, the mortality was less than 1 percent. These facts indicate distinct differences in natural resistance to the disease in the various races considered. L. R. DICE.

Evermann, B. W., and H. W. Clark. Lake Maxinkuckee, a physical and biological survey. *Indiana Dept. Conservation,* Publ. No. 7: 2 v., il. 1920. Rev. ECOLOGY 2: 311, '21.

Many data on the environmental conditions in and about Lake Maxinkuckee, Indiana, and valuable annotated lists of species of animals. Little attempt is made to correlate the environmental data with the distribution or life-histories of the animals. L. R. DICE.

Hildebrand, Samuel F. Top-minnows in relation to malarial control, with notes on their habits and distribution. *U. S. Public Health Service, Public Health Bull.,* No. 114: 1–33, figs. 1–32. 1921.

This is a paper of notable value from the standpoint of human as well as of fish ecology. *Gambusia* has been used for some years in malarial control (the fish feeds on both larval and adult mosquitoes), but until now no satisfactory study of the biology or economics of the procedure has been made. Both the habitat relations and the food of *Gambusia* and other top-minnows are considered in reference to the availability and value of these fishes in mosquito control. The author holds that, as a whole, the use of these fishes in malarial control has superior elements of economy and permanent success as compared with other methods employed. The limitations of the fish method of control, however, are not overlooked. C. L. HUBBS.

Howell, A. H. A biological survey of Alabama. I. Physiography and life zones. II. The Mammals. *U. S. Dept. Agr., Bur. Biol. Surv.,* N. Amer. Fauna, No. **45**: 88 pp., 10 figs., 11 pls. 1921.

The principal natural physiographic divisions of Alabama are: Mountain region, Tennessee Valley, Warrior Basin and Tableland, Central Prairie Belt, Coast Pine Belt, and Coast Plain or Gulf Strip. Characteristic mammals, birds, and plants are listed only for the Gulf Strip. The distribution of the Upper Austral and Lower Austral life zones in the state is mapped and lists are given of characteristic mammals, birds. and plants of each zone. Many notes on the habits and life-histories of the mammals of the state are given. L. R. DICE.

Hubbs, Carl L. The bionomics of *Porichthys notatus* Girard. *Amer. Nat.,* **54**: 380–384. 1920.

Describes the fall and winter migrations of this marine fish; the breeding habitat on rocky shallows within tide limits; the food; the breeding behavior of the male in watching the eggs attached to walls of rock cavities; the protective behavior of the fish in covering itself with sand when disturbed, and attempting to inflict wounds with the opercular spine on being touched. Of interest also is the discussion of the phosphorescence and of the sounds produced by the fish. T. L. HANKINSON.

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[1] Reprints of Zoological Abstracts, printed on one side for pasting on cards, may be secured from the Business Manager of ECOLOGY, Brooklyn Botanic Garden, for twenty-five cents per volume of four issues.

Hubbs, Carl L. The ecology and life-history of *Amphigonopterus aurora* and other viviparous perches of California. *Biol. Bull.*, **40**: 181–209, 5 figs. 1921.

The viviparous perches, Embiotocidae, are considered especially in regard to their viviparity and life-histories. Growth as shown by scale structure is prominently considered. Data are given on habitat preferences, and also on the correlation of teeth and intestine with food and of color pattern and other features with habitat. T. L. HANKINSON.

Klugh, A. Brooker. A correction concerning the life zones of Canada. *Biol. Bull.*, **41**: 272–275, 1 fig. 1921.

On the basis of the distribution of the mammals, birds, and plants, the boundary between the Canadian and Transition life zones in southern Ontario is determined and mapped. L. R. DICE.

Naumann, Einar. Spezielle Untersuchungen ueber die Ernährungsbiologie des tierischen Limnoplanktons. *Lunds Universitets Arsskrift,* 17, No. 4: 3–27, 15 figs. 1921.

The kinds of food eaten by *Cladocera,* the methods of obtaining their food and the rate of consumption are discussed. The renewal coefficient for the alimentary canal ranged from a minimum of 15 minutes in four species to 20–30 minutes in *Daphnia longispina,* and to a maximum of 60 minutes in *Sida crystallina.* C. JUDAY.

Needham, J. G. Burrowing mayflies of our larger lakes and streams. *Bull. Bur. Fish.*, **36**: 269–292, 13 pls. 1920.

Seasonal distribution, life-histories, food relations, and habits of the burrowing mayflies, with special reference to the Mississippi River in the vicinity of Fairport, Iowa. P. S. WELSH.

Nichols, Estes. Climate and its relation to acute respiratory diseases. *Mon. Weather Rev.*, **48**: 499–501. 1920.

Climate had little to do with the late influenza epidemic. Overcrowded army barracks and the congestion of the civil population, together with the inadequate ventilation made necessary by the shortage of fuel, had most to do with the production of the pandemic. When large numbers of persons are congregated together indoors there is necessarily a heavy concentration of bacteria-laden air, and it appears that a certain concentration is necessary for the spread of some respiratory diseases. With the coming of summer and the opening of windows the germ-laden air is diluted and respiratory diseases diminished. L. R. DICE.

Tschugunoff, N. L. Ueber das Plankton des nordlichen Teiles des Kaspisees. *Arbeiten der Biologischen Wolga-Station,* 6, No. 3: 109–162, 1 plate. 1921.

Ninety-two species of plankton organisms were found in the northern part of the Caspian Sea, of which 52 species were fresh-water forms. Of the total number of species, 42 were Rotifera, 26 Cladocera, and 20 Copepoda. This portion of the Caspian Sea possesses three zones, namely, a fresh-water zone with less than 0.75 gr. of Cl per liter, a brackish zone with a maximum of slightly more than 3 grams per liter, and a marine zone ranging from about 4 grams up to almost 16 grams of Cl per liter. The distribution of the various plankton organisms in these zones is discussed. C. JUDAY.

Wesenberg-Lund, C. Contributions to the biology of the Danish Culicidae. *Kgl. Danske Vidensk. Selsk. Skrifter, Naturv. og Math.,* Afd. 8, 7, No. 1: 1–210, 21 pls., 19 figs. 1921.

An interesting account of the biology of 25 species of Danish Culicidae. Particular attention is given to the habits and habitats of the larvae. C. JUDAY.